

# INTERNATIONAL SEARCH REPORT

Internal Application No

PCT/EP 03/12132

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 F28D9/00 F28F3/02

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F28D F28F F24F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1 484 126 A (COVRAD LTD) 24 August 1977 (1977-08-24) page 1, line 76 -page 2, line 20 page 2, line 77. - line 90; figures 1,2,6	1,7-11
X	GB 1 116 620 A (ASS ENG LTD) 6 June 1968 (1968-06-06) page 1, line 85 -page 2, line 94; figures 1,2	1-4,7-11
X	US 4 227 571 A (TJADEN JAN) 14 October 1980 (1980-10-14) column 2, line 19 -column 4, line 2; figure 1	1-4

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**X** Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

26 March 2004

**Date of mailing of the international search report**

06/04/2004

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 283 937 A (NIHON RADIATOR CO) 28 September 1988 (1988-09-28) column 3, line 17 -column 4, line 55; figures 1-3	14,15
X	US 4 805 693 A (FLESSATE DENNIS S) 21 February 1989 (1989-02-21) column 4, line 65 -column 6, line 53; figures 1-9	14,15
A	DE 24 46 148 A (ASS ENG LTD) 15 April 1976 (1976-04-15) page 2, line 23 -page 5, line 4; figures 1-3	1,7-14, 20
A	PATENT ABSTRACTS OF JAPAN vol. 014, no. 322 (C-0739), 10 July 1990 (1990-07-10) & JP 02 115288 A (KOBE STEEL LTD), 27 April 1990 (1990-04-27) abstract	1,2
A	WO 83 03464 A (KVANUM PLATMEKANO) 13 October 1983 (1983-10-13) page 2, line 9 - line 25; figures 1-3	1
A	US 3 847 211 A (DICHIRO A ET AL) 12 November 1974 (1974-11-12) column 6, line 45 -column 12, line 18; figures 1-12	1
A	EP 0 777 094 A (MITSUBISHI ELECTRIC CORP) 4 June 1997 (1997-06-04) cited in the application column 6, line 3 -column 17, line 36; figures 1-30	1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/12132

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 1484126	A	24-08-1977	NONE	
GB 1116620	A	06-06-1968	NONE	
US 4227571	A	14-10-1980	DE 2738670 B1	01-03-1979
			AT 357575 B	25-07-1980
			AT 613778 A	15-12-1979
			AU 516146 B2	21-05-1981
			AU 3927778 A	28-02-1980
			CH 636432 A5	31-05-1983
			DK 377378 A ,B,	27-02-1979
			FR 2401395 A1	23-03-1979
			GB 2013326 A ,B	08-08-1979
			JP 54067257 A	30-05-1979
			NL 7808773 A	28-02-1979
			SE 7808971 A	27-02-1979
EP 0283937	A	28-09-1988	JP 63150721 U	04-10-1988
			JP 64008071 U	17-01-1989
			EP 0283937 A1	28-09-1988
US 4805693	A	21-02-1989	NONE	
DE 2446148	A	15-04-1976	DE 2446148 A1	15-04-1976
JP 02115288	A	27-04-1990	NONE	
WO 8303464	A	13-10-1983	SE 445390 B	16-06-1986
			DE 3364114 D1	24-07-1986
			DK 506883 A ,B	04-11-1983
			EP 0105283 A1	18-04-1984
			FI 834108 A ,B,	09-11-1983
			IT 1159376 B	25-02-1987
			NO 834345 A	25-11-1983
			SE 8201938 A	27-09-1983
			WO 8303464 A1	13-10-1983
US 3847211	A	12-11-1974	NONE	
EP 0777094	A	04-06-1997	JP 9152292 A	10-06-1997
			CA 2190793 A1	30-05-1997
			EP 0777094 A2	04-06-1997